

Calculus Warm Up #5-1

Find the derivative. Simplify #2.

1. $f(x) = (7x^4 - 3x^2)^6$

2. $f(x) = \frac{3x(4x^2 + 5)^3}{(4x^2 + 5)^{10}}$

Tomorrow's HW Quiz includes:

pgs. 141, 148, 149, 151, 152,
purple chapter review ws.

(Not 4.1, p. 160 from Friday. We will
go over your questions tomorrow.)

Today's HW: Due turned in tomorrow.

AP Problem Set # 1 (Yellow WS)

If you are absent today, print off the
scanned version that follows.

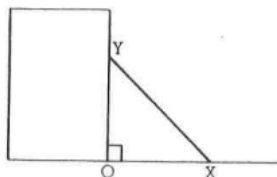
★ These are no calculator problems.

AP Calculus
AP Problem Set #1

Name _____
Team _____ Per. _____

1. Let f be the function given by $f(x) = x^3 - 7x + 6$.
- (a) Find the zeros of f .
 - (b) Write an equation of the line tangent to the graph of f at $x = -1$.

2. Consider the curve defined by $x^2 + xy + y^2 = 27$.
- (a) Write an expression for the slope of the curve at any point (x, y) .
 - (b) Determine whether the lines tangent to the curve at the x -intercepts of the curve are parallel. Show the analysis that leads to your conclusion.
 - (c) Find the points on the curve where the lines tangent to the curve are vertical.



3. A ladder 15 feet long is leaning against a building so that end X is on level ground and end Y is on the wall as shown in the figure. X is moved away from the building at the constant rate of $\frac{1}{2}$ foot per second.
- (a) Find the rate in feet per second at which the length OY is changing when X is 9 feet from the building.
 - (b) Find the rate of change in square feet per second of the area of triangle XOY when X is 9 feet from the building.